

ORR technical note to accompany CH2M ECML report

18 January 2016

Introduction

1. The purpose of this note is to explain the case team's thinking in respect of certain issues concerning CH2M's modelling that have been raised by stakeholders but not addressed directly in CH2M's report.
2. This note covers:
 - infrastructure costs;
 - rolling stock costs;
 - competitive response from airlines;
 - other characteristics of the First Group application; and
 - modelling uncertainties including the gravity model.
3. Whilst the issues discussed are important in assessing each application, some are more important in relation to a specific application. For example, the treatment of infrastructure costs is particularly relevant to Alliance's Edinburgh application, the treatment of rolling stock costs is of particular relevance to VTEC's application, and the gravity model is particularly relevant to the Alliance West Yorkshire / Cleethorpes application and to First Group's application.
4. In some of the points covered below, we set out that we intend to conduct sensitivity tests around the results in the CH2M report. Our intention is to conduct these as off-model tests of the materiality of these issues.

Infrastructure costs

5. As the CH2M report notes, the benefits of the applications have been calculated assuming that certain investments have occurred.
6. In an economic appraisal, the costs should be calculated on a consistent basis to the benefits. Therefore the incremental components of these costs (to the extent that the application's benefits require all or part of this cost to be incurred, net of any wider benefits associated with the increased network capability) should be included in the appraisal. These investment costs are not currently well understood, however. We have therefore advised CH2M to exclude the costs from its calculations of costs and benefits presented in its report, while noting that they are relevant and will be considered alongside the other costs and benefits in our assessment of the relevant applications (see also para 18 below).

Rolling stock costs

7. As CH2M notes in its report, we have asked it to assume that all rolling stock required to operate the options beyond the base timetable used to assess that option be considered incremental (and therefore not sunk).

8. In practice, our understanding is that, in contrast to the other applications, some of the IEP (VTEC) rolling stock costs are already contracted and so a proportion of the contract cost may be sunk, and would therefore be excluded from a conventional economic appraisal. We are interested in estimates of VTEC incremental rolling stock costs net of sunk costs for each relevant option, which include the extent to which this rolling stock could be redeployed onto other services and the costs associated with renegotiating the contract to vary the contracted volumes of IEP rolling stock (which in the context of IEP might take the form of varying the total contracted rolling stock availability).
9. In addition, we are considering whether treating some of the IEP costs as sunk might result in unfairness between the applicants, distort competition or otherwise not be consistent with our statutory duties. In this context, we note that some of ORR's duties might point towards excluding any sunk IEP rolling stock costs from the economic assessment. For this reason, we think that both methodologies for calculating VTEC rolling stock costs may be relevant to our decision making. However, whether our Board treats these costs as incremental or (partially or wholly) sunk in their decision making is, on the evidence provided and within the framework of our statutory duties, ultimately a decision for them.

The impact of airlines responding to the increase in rail competition

10. Stakeholders have argued that some applications compete with air and, by not modelling how airlines respond to this increased competition, the forecast impacts are distorted.
11. Our view is that this issue would not materially affect forecast revenue or impacts. We explain this below.
12. CH2M's approach to modelling air / rail journey time competition is based on observations of actual rail / air competition. These observations will include the dynamic effects of air / rail competition and therefore no further adjustment is required.
13. In the case of air / rail fare competition, CH2M's approach does not take account of how airlines might respond to increased competition from rail. To explore what the potential competitive response might be, we examined current air and rail service provision between London and Edinburgh, disaggregated by airport, fare, frequency and journey time.
14. We have formed the view from this that we do not think it is credible that airlines will respond to increased rail competition by significantly lowering fares over a sustained period. In particular, Ryanair fares to or from Edinburgh (which can be as low as £15) are already in many cases substantively below the proposed rail offer; and while EasyJet ticket prices are comparable to those being proposed for rail, they already reflect a competitive response to Ryanair (which provides more direct competition with EasyJet than a rail service would) and so are unlikely to fall significantly further.

Other characteristics of the First Group application

15. The First Group application has a number of characteristics that make it distinctly different from services currently on offer, and these present particular modelling challenges. Given

this, we intend to conduct further sensitivity tests of the First Group application, which will form part of our overall assessment of the applications, as set out below.

- Systra, in its forensic review of CH2M's modelling, recommended that we conduct a sensitivity test in relation to First Group's proposed seating, which is of higher density than competing services. There is no guidance on this from PDFH or quantitative research evidence. SDG, however, in its work for the Department for Transport, developed an approach for modelling this effect. We will act on Systra's recommendation and its suggested approach.
- We intend to test the sensitivity of CH2M's results to the assumed levels of passenger boarding at Kings Cross on the 05:30 service. This is because access costs are higher at this time (notably because the London Underground is not in operation), and therefore levels of demand generation, in particular, may be overstated.
- First Group has estimated a substantial proportion of passengers will be generated by switching from coach. We agree with CH2M that this generation is likely to be overstated, not least because it will be double counting the generation allowed for through MOIRA elasticities. Reflecting this, we will conduct a sensitivity test on a more modest additional switching from coach.

Modelling uncertainties including the gravity model

16. There are a number of uncertainties regarding impacts of different applications. In the main, we are handling this through sensitivity testing, as this note and the CH2M report explains.
17. In some cases, we will adopt a slightly different approach to understanding sensitivities. In particular, we think it can be useful to consider what assumptions would be needed to come to a different conclusion and then consider whether these assumptions are likely or realistic. For example, we may consider the assumptions needed to conclude that the NPA ratio is below 0.3, or to change the ranking of options.
18. There is one area at least in which we think this approach might be particularly helpful: the estimate of those infrastructure costs that are integral to the proposed Alliance services to Edinburgh. For this, if no robust cost data becomes available, we intend to consider what impact different infrastructure cost levels might have on the ranking of applications, according to net present value and/or net present value per path. This may help us to identify whether the current uncertainty around the level of infrastructure cost is likely to have a bearing on the ORR's decisions.
19. It is inherently difficult to model demand generated through large changes in accessibility. CH2M has developed a gravity model to do this. The gravity model has now been through extensive challenge and audit, and CH2M has refined it, including a more careful and sophisticated treatment of station catchments. We are content with this work and confident that it provides useful evidence on the relevant applications. Nevertheless, we recognise that the associated estimate of generated demand is necessarily subject to a higher degree

of uncertainty than other aspects of the demand forecasts. This is one factor that will need to be considered when the ORR reaches a decision.